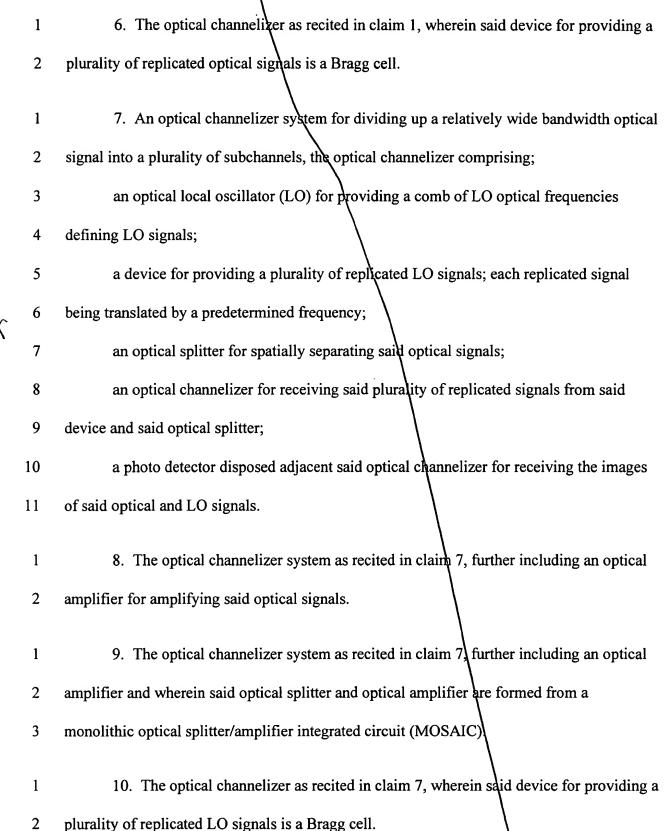
CLAIMS:

- 1 CINAN optical channelizer system for dividing up a relatively wide bandwidth optical
- 2 signal into a plurality of subchannels, the optical channelizer system comprising:
- an optical local oscillator (LO) for providing a comb of LO optical frequencies,
- an optical splitter for spatially dividing said comb of LO optical frequencies into a
- 5 plurality of LO signals;
- a device for providing a plurality of replicated versions of the optical signal, each
- 7 version being translated by a predetermined frequency;
- 8 an optical channelizer for receiving said replicated optical signals and said plurality
- 9 of LO signals; and
- a photo detector array disposed adjacent said optical channelizer for receiving the
- images of said replicated optical signals and said LO signals.
- 2. The optical channelizer system as recited in claim 1, wherein said optical
- 2 channelizer is based upon a diffraction grating.
- 3. The optical channelizer system as recited in claim \(\mathbf{1} \), wherein said optical
- 2 channelizer is based upon an integrated optical array wave guide grating.
- 4. The optical channelizer system as recited in claim 1, further including an optical
- 2 amplifier for amplifying said LO optical signals.
- 5. The optical channelizer system as recited in claim 4, wherein said optical splitter
- and optical amplifier is formed from a monolithic optical splitter/amplifier integrated circuit
- 3 (MOSAIC).



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amplifier integrated circuit (MOSAIC).

11. An optical channelizer system for separating relatively wideband optical signals 1 2 into a plurality of sub-channels comprising: 3 a plurality of optical sub-channelizers each subchannelizer including means for spatially splitting one or the other of said optical signals or said LO signals; 4 means for replicating and frequency shifting the other of said optical signal or said 5 6 LO signals; an optical channelizer for receiving signals from said splitting means and said 7 8 replicating means; and a photo detector array for receiving the images of said signals from said optical 9 10 channelizer. 12. The optical channelizer system as recited in claim 11, wherein said optical 1 2 channelizer includes a diffraction grating. 13. The optical channelizer system as recited in claim 11, wherein said replicating 1 2 means includes a Bragg cell. 1 14. The optical channelizer system as recited in claim 11, further including an 2 optical amplifier. 15. The optical channelizer system as recited in claim 14, wherein said optical 1 amplifier and said splitting means are formed from monolithic optical splitter/optical 2